

SUSTAINABLE LAND-USE PLANNING FOR THE ASHEPOO-COMBAHEE-EDISTO (ACE) BASIN REGION: SYNTHESIZING LOCAL KNOWLEDGE, PREFERENCES, AND SOCIOECONOMICS

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INTRODUCTION

The nation's coastal resources are under increasing pressure from population growth and development. The coastal population is projected to increase by twenty-eight million people between 1994 and 2015 (National Oceanic and Atmospheric Administration's Coastal Service Center, 2003). South Carolina has 144 more persons and 200 acres less of natural landscape every day, and by 2020, one million more residents are estimated to live in South Carolina (Conservation Voters of South Carolina Education Fund, 2004). Conversion of natural and productive lands to human use, sprawling patterns, and inappropriate location of development, have been linked to many environmental problems, including deterioration of water quality, loss of rural lands, destruction of wildlife habitat, and a declining sense of community and quality of life. Thus, policy-makers, resource managers, environmental groups and citizens in South Carolina are concerned with the potential environmental and public health impacts associated with rapid growth.

The Ashepoo-Combahee-Edisto (ACE) Basin, located in the southeastern part of South Carolina, is a prime example of a near pristine estuarine environment that is beginning to face the negative implications of rapid urbanization and economic development. Colleton County, in which the majority of the ACE Basin study area is located, is expected to increase from a 1990 population of 34,377 people to over 43,180 people by the year 2015 (South Carolina Budget and Control Board, 2004). Land-use planning is a critical component in dealing with the growth and development occurring in the ACE Basin region. The implementation of sustainable growth management is vital for promoting both economic development and the conservation of resources.

Since the majority of the ACE Basin is within Colleton County, socioeconomic and environmental data for the County clearly helps characterize the ACE Basin. The natural resources of the ACE Basin support the forestry, agriculture, hunting, commercial and recreational fishing, and tourism industries in Colleton County. Agriculture was the largest land-use in Colleton County in 1996 (representing 66,140 acres) and contributed over \$15 million in revenue to the county's economy (South Carolina Department of Natural Resources and the National Oceanic and Atmospheric Administration's Coastal Service Center, 2000). In 1996, forestlands represented more than half of Colleton County (457,069 acres) and were a major contributor to the local economy by generating more than \$43 million in forest-related revenue (South Carolina Department of Natural Resources and the National Oceanic and Atmospheric Administration's Coastal Service Center, 2000).

However, much of this prime farmland and open space is at great risk for change as the county is a potential area for rapid urbanization. The economic growth that follows urbanization brings an increase in urban and residential land coverage. Powerful urban and residential land development companies often offer large monetary incentives to forest landowners, farmers, and private landowners to sell parcels of land. Situated between South Carolina's two fastest growing cities, Charleston and Beaufort, Colleton County is faced with increasing economic and residential development pressures. Effective management of natural resources and development in the ACE Basin is essential for its sustainable future. The research described in this study seeks to develop a sustainable land-use planning tool that balances the economic, social, and ecological fabric of Colleton County for use by land managers, conservation groups, agencies, and most importantly private citizens in the ACE Basin region.

An emerging method in achieving sustainable communities is the application of the Human Ecosystem Framework, which was developed by the Interior Columbia Basin Management Project (Machlis, Force, and Dalton, 1994). This approach provides an equilibrium model that links natural resources, socioeconomic condition, cultural resources, social institutions, social cycles, and social order. This project draws upon the Human Ecosystem Framework to compile data related to (a) the area's social, political, and economic characteristics, (b) the conflicts among various uses, users, and managers of the ecosystem, and (c) the stakeholder perceptions and values related to the natural resources and the current and future uses of those resources. The Human Dimensions Framework (1997), defined as "the scientific investigation of the physical, biological, sociological, psychological, cultural, and economic aspects of natural resource utilization at the individual and community levels", is also utilized in this study for the collection of data necessary to describe the people and the current social conditions in the region. Based on the concepts and indicators outlined in these frameworks, this social assessment study focuses on the following dimensions of Colleton County: historical background, public perceptions, socioeconomic characteristics, and community resources. The goal is to provide local stakeholders with a better understanding of the changing human activities and socioeconomic conditions in the ACE Basin region for use in addressing the challenges of preserving the natural and cultural resources, while promoting economic development in Colleton County.

METHODS

Several environmental and community indicators were examined to help identify problems, represent important factors and relationships, understand current conditions, identify community goals, and measure change, trends, and progress in Colleton County. The following four areas of Colleton County were investigated for the collection of appropriate data: 1) community profile, 2) socioeconomic characteristics, 3) natural resource conditions, and 4) growth management strategies. The following methods were used to develop a sustainable land-use planning tool that balances local stakeholder preferences, socioeconomic needs, and natural resource demands within Colleton County. A review of Colleton County's social and economic history was conducted to assess the community's connections with the natural resources in the region. Local histories obtained from published documents at public libraries, including historical maps, and

attending local workshops with key stakeholders and local residents provided valuable information about land use trends and current issues in Colleton County. Interviews with key informants and stakeholders were conducted to determine the livability, attractiveness, and quality of life in Colleton County. The questions were designed to provide information for understanding current conditions, identifying critical issues and concerns, and gaining insight into the varying perceptions and values in Colleton County.

A qualitative evaluation of Colleton County's comprehensive plan was used to provide an overview of the region's documented conditions, critical issues, and vision for managing growth and development. The evaluation was conducted using an assessment form designed during a comprehensive plan assessment project at the South Carolina Sea Grant Consortium.

A review of the *2004 Quality of Life Survey Results*—a report of the survey conducted by the Colleton County Planning Commission for the purpose of soliciting the opinions from residents and property owners about community assets, community development needs, land use issues, and economic development—provided valuable information about community issues and planning concerns. Windshield surveys of the county with a digital camera were also conducted to ground-truth existing conditions, while becoming familiar with land use patterns and trends.

Socioeconomic data was collected was to highlight geographical patterns in the following general categories of data: population, economy, social and cultural, and land use. Data was collected for each social indicator at both the county and CCD levels. The 2000 US Census Data was the primary source of data for population and demographic information in Colleton County, but inter-census data was also collected to determine more recent population and demographic estimates and projections. Data is illustrated in a series of maps, complemented tables, and explanatory text to help show the relationship between what is happening and where it is happening. The maps were created by downloading Census 2000 Tiger/Line Shapefiles and using data layer overlay techniques in ArcGIS 9.0.

Textual content analysis of coastal land-use management strategies was conducted to help determine the appropriate management strategies, plans, and programs suitable for Colleton County. Several regulatory, acquisition, and fiscal tools were examined as potential techniques for protecting community assets and natural resources in the ACE Basin Region. These tools include zoning, urban growth boundaries, conservation easements, land acquisition, purchase of development rights, and state and federal project funding opportunities.

PROJECT SIGNIFICANCE

Nearly half of the respondents from the 2002 Triennial Coastal Resource Management Customer Survey conducted by the NOAA Coastal Service Center in Charleston, SC classified themselves as being unfamiliar with the areas of needs assessment, surveying, interviews, group data collection, resource valuation, and cultural, historic, and heritage resource management (NOAA Coastal Services Center, 2002). The proposed research will generate a user-friendly source of

information for the coastal management community, other NERRs reserves, and coastal communities to facilitate land-use planning and management. The methodology of this study can also be applied to broad regions prior to urbanization.

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